

Attachment B: Examples

Auction Notice California Cap-and-Trade Program Greenhouse Gas Allowance Auction

This attachment provides information and examples of how to determine the amount of a bid guarantee, how holding and purchase limits are applied, and examples of how auctions are settled. This attachment also clarifies that submitted bids that contain bid quantities in excess of the purchase limit or the holding limit, or that have a maximum value greater than the bid guarantee, are each violations of the California Cap-and-Trade Regulation.

This document is guidance only and does not supersede the California Cap-and-Trade Regulation. In circumstances of uncertainty, the California Cap-and-Trade Regulation is the controlling document.

I. Determining Your Bid Guarantee

Table 1 presents hypothetical bid submissions for an auction in which five entities are participating. In the following examples, it is assumed that each of the participants is only bidding in the Current Auction. Considerations for participation in the Advance Auction are included at the end of this attachment. Each row in Table 1 (next page) provides the bid value at each bid price. *ARB will accept bids for lots of allowances; each bid lot represents a bundle of 1,000 allowances.*

Table 1: Maximum Bid Value of Bidder's Bids

Entity Name	Bid Price	Bid Lots	Bid Number of Allowances	Cumulative Allowances	Bid Value at Each Bid Price
A	\$21.26	130	130,000	130,000	\$2,763,800
A	\$17.29	190	190,000	320,000	\$5,532,800
A	\$14.46	135	135,000	455,000	\$6,579,300
A	\$11.62	125	125,000	580,000	\$6,739,600
B	\$16.67	130	130,000	130,000	\$2,167,100
B	\$11.34	80	80,000	210,000	\$2,381,400
C	\$40.35	240	240,000	240,000	\$9,684,000
C	\$36.50	420	420,000	660,000	\$24,090,000
C	\$34.59	750	750,000	1,410,000	\$48,771,900
D	\$20.19	900	900,000	900,000	\$18,171,000
D	\$17.24	780	780,000	1,680,000	\$28,963,200
E	\$18.48	300	300,000	300,000	\$5,544,000
E	\$16.44	252	252,000	552,000	\$9,074,880
E	\$14.46	85	85,000	637,000	\$9,211,020
E	\$11.34	35	35,000	672,000	\$7,620,480

Table 1 Terminology

Bid Number of Allowances = Bid Lots * 1,000

Cumulative Allowances = Sum of current Bid Number of Allowances and Bid Number of Allowances at each higher Bid Price

Bid Value = Cumulative Allowances * Bid Price

When bidding in an auction, the bid price, number of bid lots, and instrument vintage are entered for each bid. The cumulative allowances shown in Table 1 would not be entered into the bid schedule. The “Cumulative Allowances” column indicates the total allowances that have been bid collectively for all bids submitted by an entity.

To determine the value of your total bid guarantee when there are multiple bids at different bid prices, the following process would apply:

Example 1: Calculating a Bid Guarantee When Submitting Multiple Bids

As shown in Table 1, Entity A has submitted four different bids at four different bid prices.

- Bid price of \$21.26: Entity A bid for 130,000 allowances at a cost of \$2,763,800.
- Bid price of \$17.29: Entity A bid for 320,000 allowances at a cost of \$5,532,800. (320,000 allowances is the sum of 130,000 plus 190,000)
- Bid price of \$14.46: Entity A bid for 455,000 allowances at a cost of \$6,579,300. (455,000 allowances is the sum of 130,000 plus 190,000 plus 135,000)
- Bid price of \$11.62: Entity A bid for 580,000 allowances at a cost of \$6,739,600. (580,000 allowances is the sum of 130,000 plus 190,000 plus 135,000 plus 125,000)

Entity A's bid schedule shows that it is willing to purchase a total of 580,000 allowances at a price of \$11.62 at a maximum bid value of \$6,739,600. **Entity A should submit a bid guarantee of at least \$6,739,600 if it wants to buy all the allowances in its bid schedule.**

Using the same evaluation process for the bid schedules submitted by Entities B to E, the maximum total value of each entity's bid schedule is determined, highlighted in gray in Table 1 and shown above. Note that for Entity E, the highest value in the bid schedule is the third bid and that, if the settlement price dropped to the reserve price, Entity E's total cost would fall relative to the third bid at \$14.46, based on the lower settlement price.

Based on this example, each entity's bid guarantee should be equal to or greater than the maximum total value for the planned bid schedule in Table 1. Entities bidding in an auction will be limited to incurring a total cost less than or equal to the dollar amount of bid guarantee submitted and should evaluate their bids against the bid guarantee they provided in the manner illustrated in this example.

A bid guarantee that is less than the maximum value of submitted bids for the auction is a violation of the California Cap-and-Trade Regulation.

The minimum bid guarantee Bidders A to E should submit to avoid having their bid limited by the Auction Administrator would be as follows:

- Bidder A – \$6,739,600
- Bidder B – \$2,381,400
- Bidder C – \$48,771,900
- Bidder D – \$28,963,200
- Bidder E – \$9,211,020

II. Bid Guarantees for Current and Advance Auctions

The settlement process occurs for both the Current Auction and Advance Auctions at the same time. However, the bid guarantee will be evaluated against the Current Auction bids first, and then against bids made in the Advance Auction. In other words, bidders submit a single bid guarantee that is used first for the Current Auction and any remainder of the bid guarantee after the Current Auction is applied to bids in the Advance Auction if the bidder submits bids for both auctions. Submitting bids with a total maximum value in excess of the bid guarantee (Current Auction and Advance Auction) is a violation of the California Cap-and-Trade Regulation. Example 2 demonstrates how bidders should evaluate their bids or bid schedule with respect to the bid guarantee.

Example 2: Application of a Single Bid Guarantee to Current and Advance Auction

If Entity A in Table 1 submitted a bid guarantee of \$10,000,000 and the auction settlement price for the Current Auction is \$14.46, then that would leave a bid guarantee amount remaining of \$3,420,700 to be available for the Advance Auction.

$$\$10,000,000 - \$6,579,300 = \$3,420,700$$

III. Entity Bid Evaluation Procedures for Purchase Limits and Holding Limits

Example 3 and Example 4 illustrate how bidders should evaluate their bid schedules for the Current Auction purchase limits and holding limit.

A. Purchase Limits

The purchase limits for a Current Auction are 40 percent for electrical distribution utilities, 15 percent for other covered and opt-in entities, and 4 percent for voluntarily

associated entities. The purchase limit percentages apply to the auction allowance supply.

Example 3: Determining an Entity Purchase Limit

For each category of entity, multiply the purchase limit for the entity category by the total amount of allowances available for auction. Thus, if an entity is an electrical distribution utility:

If the total number of allowances for sale = 4,020,000 allowances

Purchase limit = 4,020,000 * 0.40

Purchase limit = 1,608,000 allowances

B. Holding Limits

Holding limits are based on the following formula:

Holding limit = $0.1 * \text{Base} + 0.025 * (\text{Annual Allowance Budget} - \text{Base})$

Where:

“Base” equals 25 million metric tons of carbon dioxide equivalent (CO₂e).

“Annual Allowance Budget” is the number of allowances issued for the current budget year.

For 2014, the annual budget in California and Quebec is 182,900,000 allowances.

Holding Limit = $0.1 * 25,000,000 + 0.025 * (182,900,000 - 25,000,000)$

2014 Holding Limit = 6,447,500 allowances

C. Maximum Number of Allowances an Entity Can Hold

The holding limit is the maximum number of allowances an entity may have in its holding account or the maximum number of allowances that may be jointly held by a group of entities with a direct corporate association. For the Current Auction, the applicable holding limit is for allowances from the current calendar year, previous calendar years, and allowances purchased from the Allowance Price Containment Reserve (section 95920(c)(1) of the Cap-and-Trade Regulation).

There is a separate holding limit for each calendar year of allowances with a vintage year beyond the current calendar year. For the Advance Auction, allowances purchased through the Advance Auction are subject to the holding limit for the vintage

year of the allowances sold at that Advance Auction (section 95920(c)(2) of the Cap-and-Trade Regulation).

Submitted bids that contain bid quantities that would result in an entity exceeding a holding limit are a violation of the California Cap-and-Trade Regulation.

A covered entity may exempt a limited number of allowances from the current vintage holding limit by transferring them to a compliance account. This “limited exemption” is described in section 95920(d)(2) of the Regulation. The limited exemption is based on an entity’s emissions, and is designed to allow covered entities to accumulate the allowances they need for compliance. For that reason, the limited exemption is increased on October 1 of each year by the amount of the entity’s emissions contained in the most recent verified emissions data report. The limited exemption is decreased at the end of the year following the close of a compliance period, after the entity has completed its surrender obligation for the compliance period.

Entities can calculate the maximum number of allowances they can hold using the following example (Example 4) and using the holding limit values from Table 2.

Example 4: Determining the Maximum Number of Allowances an Entity Can Hold

The maximum number of allowances an entity can hold at one time equals the holding limit plus the limited exemption. For example, assuming an entity takes full advantage of the limited exemption, in 2014 this would be:

Maximum Number of Allowances Held = 6,447,500 + Limited Exemption.

Suppose an entity’s limited exemption is equal to 4,000,000 metric tons and it holds 1,000,000 allowances in its compliance account; in this case, the maximum number of allowances the entity can purchase and stay within the holding limit is:

Maximum Number of Allowances Purchasable = 6,447,500 +
[4,000,000 – 1,000,000] = 9,447,500 allowances.

However, in the above example, the entity must transfer 3,000,000 allowances to its compliance account to be in compliance with the holding limit. If an entity’s compliance account balance is 4,500,000 allowances, the following applies:

Maximum Number of Allowances Purchasable = 6,447,500 +
[4,000,000 – 4,500,000] = 5,947,500.

Entities can hold more allowances in their compliance account than allowed under the limited exemption, but this practice will not increase what they can hold in their holding account.

Section 95912(j)(3) allows the Executive Officer to transfer allowances won in an auction to an entity's holding account or its compliance account as needed to facilitate compliance with the holding limit. If an entity had a number of allowances in its holding account equal to the holding limit, then the entity could buy at the auction a number of allowances equal to its remaining limited exemption.

IV. Auction Administrator Application of the Bid Evaluation Criteria

Submitted bids that contain bid quantities in excess of the purchase limit or the holding limit, or that have a maximum value greater than the bid guarantee, are violations of the California Cap-and-Trade Regulation and will be rejected, in bundles of 1,000 allowances, until the respective limit is met. In short, only that portion of the bid quantity that exceeds the respective limit will be rejected, not the entire bid quantity. Rejected bid quantities will not be considered in determining the settlement price. "Qualified bids" are the bids that remain after the submitted bids have been evaluated for holding limit, purchase limit, and bid guarantee violations.

Determination of qualified bids occurs after the bid window has been closed and before the settlement price is determined. The process is the same for the Current Auction and the Advance Auction. The result is a set of qualified bids from which the settlement price is determined for both the Current Auction and the Advance Auction. For the purposes of this attachment and examples, the reserve price for both the Current Auction and Advance Auction is \$11.34 per allowance. The Auction Administrator will reject any bids for which the bid price is less than the reserve price.

Table 2 shows sample bid evaluation data that will be used to demonstrate how the Auction Administrator will evaluate each entity's bids or bid schedule. In some cases, more than one evaluation criterion (i.e., purchase limit, holding limit, and bid guarantee) may result in a bid being in violation of the California Cap-and-Trade Regulation.

Table 2: Sample Bid Evaluation Data

Bidder Name	Entity Type	Purchase Limit (Number of Allowances)	*Holding Limit (Number of Allowances)	Bid Guarantee
A	Covered Entity	603,000	6,447,500	\$6,739,600
B	Voluntarily Associated Entity	160,800	6,447,500	\$2,381,400
C	Electric Utility	1,608,000	6,447,500	\$60,766,900
D	Electric Utility	1,608,000	6,447,500	\$28,427,200
E	Electric Utility	1,608,000	6,447,500	\$13,207,270

*Assumes holding account balance is zero and that allowances in the compliance account are exactly equal to the limited exemption.

In the sample bid evaluation data, the bid guarantees represent actual bid guarantees submitted. In some cases, the bid guarantee is different than shown in Table 1. This is done to demonstrate how the bid guarantee criteria impacts bids if the bid guarantee is less than the bid value at a specific bid price and how the bid guarantee is used in the Advance Auction.

A. Purchase Limit Evaluation

Example 5: Purchase Limit Evaluation by Comparison of Bid Schedules in Table 1 Against the Sample Bid Evaluation Data Criteria in Table 2.

Entity A: Entity A's bids are within the purchase limit of 603,000 allowances.

Entity B: Entity B's bids are not within the purchase limit as the cumulative total of the 2nd bid is 210,000 allowances and Entity B can only purchase 160,800 allowances. Submitted bids that contain bid quantities in excess of the purchase limit will be rejected in bundles of 1,000 allowances until the limit is met. Thus, only the portion of the bid that is in violation will be rejected, not the entire bid. Entity B's 1st bid is for 130,000 allowances, but it can purchase no more than an additional 30,000 allowances (160,000– 130,000). Thus, Entity B's 2nd bid would be reduced to 30,000 allowances (or 30 bid lots). This qualified bid quantity would be used in calculating the settlement price.

Entity C: Entity C's bids are within the purchase limit of 1,608,000 allowances.

Entity D: Entity D's bids are not within the purchase limit as the cumulative total of bids, 1,680,000 allowances, exceeds the purchase limit of 1,608,000. Submitted bids that contain bid quantities in excess of the purchase limit will be rejected in bundles of 1,000 allowances until the limit is met. Thus, only the portion of the bid that is in violation will be rejected, not the entire bid. Entity D's 1st bid is for 900,000 allowances, but it can purchase no more than an additional 708,000 allowances (1,608,000 – 900,000). Thus, Entity D's 2nd qualified bid would be limited to 708,000 allowances (or 708 bid lots).

Entity E: Entity E's bids are within the purchase limit of 1,608,000 allowances.

B. Holding Limit Evaluation

The process to evaluate the holding limit is to assess the total cumulative allowances against the holding limit in Table 2.

Example 6: Holding Limit Evaluation by Comparison of Bids in Table 1 Against the Sample Bid Evaluation Data in Table 2.

All entities in this example meet the holding limit requirements of the Regulation; no bidder has bid for more than 6,447,500 cumulative allowances. At the conclusion of the auction, assuming holding account balances are equal to zero allowances at the start of the auction, allowances placed in entity general holding accounts will be less than the holding limit.

C. Bid Guarantee Evaluation

Prior to auction settlement, the Auction Administrator will evaluate the submitted bid guarantee for each entity for the Current Auction. As an entity provides a single bid guarantee, any funds remaining once the Current Auction settlement price has been determined will be applied to the Advance Auction. If a bid guarantee is less than the sum of the maximum value of submitted bids for the Current Auction and Advance Auction, it is a violation of the California Cap-and-Trade Regulation. Notwithstanding a potential violation of the Regulation, the settlement price algorithm is structured to recognize that a bid that is limited by the bid guarantee at a higher submitted bid price may not be limited as much (or limited at all) at potential settlement prices lower than the bid price submitted by the bidder. If the bidder can be sold more allowances, the settlement price algorithm will do so, up to the limits of the bid guarantee.

Example 7 below illustrates an example in which an entity's bid guarantee as provided in Table 2 is insufficient to cover its maximum total bid cost provided in Table 1.

Example 7: Bid Guarantee Evaluation

Entity A: Entity A's bid guarantee of \$6,739,600 is sufficient to cover its maximum total bid cost of \$6,739,600.

Entity B: Entity B's bid guarantee of \$2,381,400 is sufficient to cover its maximum total bid cost of \$2,381,400.

Entity C: Entity C's bid guarantee of \$60,766,900 is sufficient to cover its maximum total bid cost of \$48,771,900.

Entity D: Entity D's bid guarantee of \$28,427,200 is not sufficient to cover its maximum total bid cost of \$28,963,200. The Auction Administrator would reduce Entity D's 2nd bid to 748,000 allowances. The total allowances that can be purchased are 1,648,909 ($28,427,200 / \$17.24 = 1,648,909$). The total allowances that can be purchased through the 2nd bid are 748,000 ($1,648,000 - 900,000$).

Thus, Entity D's 2nd bid would be limited to 748,000 allowances (or 748 bid lots) based on the bid guarantee limitation. See Table 1 for Entity D's bidding details.

In the case of Entity D's 2nd qualified bid, the bid does not pass the purchase limit evaluation or the bid guarantee evaluation. When a bid is limited by more than one criterion, the bid will be reduced in lots of 1,000 allowances to the most limiting constraint. A reduction of the 2nd bid to 748,000 allowances would meet the bid guarantee limit but not the purchase limit, which requires the 2nd bid to be reduced to 708,000 allowances. The bid must pass all three evaluations to be qualified and in this example, the most limiting criterion is the purchase limit. The total allowances that can be purchased through the 2nd bid in order to meet the purchase limit are 708,000 ($1,608,000 - 900,000 = 708,000$).

Entity E: Entity E's bid guarantee of \$13,207,270 is sufficient to cover its maximum total bid cost of \$9,211,020.

Table 3 shows the qualified bids after the Auction Administrator's evaluation, with the adjusted bid quantities shaded in grey. These are the bids that would be used in calculating the settlement price. Please note that the cumulative allowances and bid costs are also adjusted to reflect adjusted bid quantities where applicable.

Table 3: Qualified Bids Accepted by Auction Administrator

Bidder Name	Bid Price	Accepted Bid Lots	Accepted Bid Allowances	Cumulative Allowances	Bid Value at Each Bid Price
A	\$21.26	130	130,000	130,000	\$2,763,800
A	\$17.29	190	190,000	320,000	\$5,532,800
A	\$14.46	135	135,000	455,000	\$6,579,300
A	\$11.62	125	125,000	580,000	\$6,739,600
B	\$16.67	130	130,000	130,000	\$2,167,100
B	\$11.34	30	30,000	160,000	\$1,814,400
C	\$40.35	240	240,000	240,000	\$9,684,000
C	\$36.50	420	420,000	660,000	\$24,090,000
C	\$34.59	750	750,000	1,410,000	\$48,771,900
D	\$20.19	900	900,000	900,000	\$18,171,000
D	\$17.24	708	708,000	1,608,000	\$27,721,920
E	\$18.48	300	300,000	300,000	\$5,544,000
E	\$16.44	252	252,000	552,000	\$9,074,880
E	\$14.46	85	85,000	637,000	\$9,211,020
E	\$11.34	35	35,000	672,000	\$7,620,480

V. Settlement Price Determination Procedures

The process to determine the settlement price requires that the Auction Administrator rank qualified bids from all bidders from highest to lowest bid price. Allowances will be sold to bidders, beginning with the highest qualified bid price and moving to successively lower priced bids, until all of the available allowances are sold. Each bid will be assessed against purchase and holding limits and the bid guarantee as described in the previous section. The bid at which all available allowances are sold becomes the settlement price; this is the price per allowance that all bidders will be charged for the allowances won in the auction. Bids submitted at prices below the settlement price will not win any allowances.

In determining the settlement price, the Auction Administrator may find that the quantity of allowances bid for at a specific price exceeds the remaining allowances available for

sale. When this occurs, a tiebreaker procedure is used to determine the number of allowances awarded to each bidder.

This section provides three examples of the calculation of the settlement price. The first example (Example 8), immediately below, results in the sale of all available allowances with the last winning bid completely exhausting the available allowances. The second example (Example 9) shows the settlement price determination when an entity's bid schedule is limited by the entity's submitted bid guarantee. The third example (Example 10) illustrates the tiebreaker procedure.

Example 8: Settlement Price When the Last Winning Bid Exhausts the Available Allowances

Bidders are assumed to be bidding into a Current Auction. (The process for determining the settlement price is the same for the Current and Advance Auction.) Qualified bids from Entities A to E in the bid evaluation process provided in Table 3 are used in this settlement price example. The quantity of allowances available for sale is 4,020,000.

All qualified bids are arranged from highest to lowest bid price. In Table 4, the 5th column shows cumulative allowances, that is, the sum of allowances bid for at that bid price and the number of allowances bid at each higher bid price, not cumulative allowances bid for ordered by entity. The 6th column (last column in the table) shows allowances remaining to be sold, which is the difference between the allowance supply of 4,020,000 and the cumulative allowances in the 5th column.

Table 4: Single Round, Sealed Bid Format Example

Bidder Name	Bid Price	Qualified Bid Lots	Qualified Bid Allowances	Cumulative Allowances	Allowance Supply Remaining
C	\$40.35	240	240,000	240,000	3,780,000
C	\$36.50	420	420,000	660,000	3,360,000
C	\$34.59	750	750,000	1,410,000	2,610,000
A	\$21.26	130	130,000	1,540,000	2,480,000
D	\$20.19	900	900,000	2,440,000	1,580,000
E	\$18.48	300	300,000	2,740,000	1,280,000
A	\$17.29	190	190,000	2,930,000	1,090,000
D	\$17.24	708	708,000	3,638,000	382,000
B	\$16.67	130	130,000	3,768,000	252,000
E	\$16.44	252	252,000	4,020,000	0
A	\$14.46	135	135,000	4,155,000	0
E	\$14.46	85	85,000	4,240,000	0
A	\$11.62	125	125,000	4,365,000	0
B	\$11.34	30	30,000	4,395,000	0
E	\$11.34	35	35,000	4,430,000	0

At the highest bid price of \$40.35, only 240,000 of the allowances have been sold and 3,780,000 allowances remain. At the next lower bid price, \$36.50, a total of 660,000 allowances have been sold and 3,360,000 allowances remain to be sold. Continuing down the 6th column, at the bid price of \$16.44, the entire available supply of allowances is sold and qualified bids at prices below \$16.44 cannot be filled. Hence, the settlement price is \$16.44 (shaded in grey in Table 4) and 4,020,000 allowances are sold at a total bid cost of \$66,088,800.

Entity A would win 320,000 allowances from its first two bids, its 3rd and 4th bids would be unsuccessful, and its total bid cost is \$5,260,800 (320,000 * \$16.44). Allowances won by each bidder and their respective total bid cost are shown in Table 5.

Table 5: Winning Bids Example

Entity Name	Allowances Won	Total Cost
Entity A	320,000	\$5,260,800
Entity B	130,000	\$2,137,200
Entity C	1,410,000	\$23,180,400
Entity D	1,608,000	\$26,435,520
Entity E	552,000	\$9,074,880
Total	4,020,000	\$66,088,800

In Example 8, with the settlement price of \$16.44 Entity D is limited only by the purchase limit.

As shown in Table 1, Entity E, while not limited by its bid guarantee, would be able to purchase more allowances at a price of \$11.34 than at \$14.46 (672,000 compared to 637,000) at a lower total bid cost (\$7,620,480 compared to \$9,211,020). This is simply a consequence of a decline in the potential settlement price, given the bid schedule of Entity E.

Example 9: Settlement Price Determination When an Entity's Bid Schedule is Limited by the Entity's Submitted Bid Guarantee

Quantity of allowances available for sale = 4,405,000

Example 9 includes the same bid submissions as used in Example 8, the first settlement price example. However, the larger supply of allowances would increase the purchase limits to the following:

Electrical Distribution Utility = 1,762,000 allowances.

Covered Entity or Opt-In Covered Entity = 660,750 allowances.

Voluntarily Associated Entity = 176,200 allowances.

Entity A: Entity A's bids are still within the purchase limit.

Entity B: Entity B's bids are still not within the purchase limit. Given Entity B's first bid of 130,000 allowances, its 2nd bid is reduced to 46,000 (or 46 bid lots) to comply with the purchase limit.

Entity C: Entity C's bids are still within the purchase limit.

Entity D: Entity D's 2nd bid is within the purchase limit (1,762,000 allowances exceeds the 1,680,000 allowances D wishes to purchase). However, D's bid guarantee is limiting, as its total bid cost of \$28,963,200 exceeds its bid guarantee of \$28,427,200. Thus Entity D's 2nd bid at \$17.24 would be limited to 748,000 allowances.

Entity E: Entity E's bids are still within the purchase limit.

Table 6 shows the calculation of the settlement price from this auction. In this instance, the settlement price falls to \$11.62, the price at which all allowances are sold.

While Entity D's 2nd bid is limited by the bid guarantee at a price of \$17.24 as detailed in Example 7, Entity D can purchase all of the 1,680,000 allowances it wishes to purchase at the potential settlement price of \$11.62 because the total bid cost is less than its bid guarantee. However, Entity D's cumulative bid value exceeded its bid guarantee (regardless of the auction settlement), which is a violation of the Regulation.

Entity D's bid guarantee = \$28,427,200

1,680,000 allowances (Table 1 total for Entity D) * \$11.62 = \$19,521,600

Table 6 shows a "bid" shaded in grey for Entity D at \$16.92. This is not a bid Entity D submitted, but is included to demonstrate the first bid price of all submitted bid prices at which D can purchase all 1,680,000 allowances with the submitted bid guarantee since D's total bid cost at \$16.92 is \$28,425,600. At the bid price of \$16.92, all 780,000 allowances bid at \$17.24 may be purchased.

Table 6: Settlement Price Determination with a Bid Guarantee Limit

Bidder Name	Bid Price	Accepted Bid Lots	Accepted Bid Allowances	Cumulative Allowances	Allowance Supply Remaining
C	\$40.35	240	240,000	240,000	4,165,000
C	\$36.50	420	420,000	660,000	3,745,000
C	\$34.59	750	750,000	1,410,000	2,995,000
A	\$21.26	130	130,000	1,540,000	2,865,000
D	\$20.19	900	900,000	2,440,000	1,965,000
E	\$18.48	300	300,000	2,740,000	1,665,000
A	\$17.29	190	190,000	2,930,000	1,475,000
D	\$17.24	748	748,000	3,678,000	727,000
B	\$16.67	130	130,000	3,808,000	597,000
E	\$16.44	252	252,000	4,060,000	345,000
D	\$16.92	780	780,000	4,477,000	273,000
A	\$14.46	135	135,000	4,195,000	210,000
E	\$14.46	85	85,000	4,280,000	125,000
A	\$11.62	125	125,000	4,405,000	0
B	\$11.34	46	46,000	4,451,000	0
E	\$11.34	35	35,000	4,486,000	0

The settlement price algorithm is structured to recognize that a bid that is limited by the bid guarantee at a submitted bid price may not be limited as much or limited at all at potential settlement prices lower than the price submitted by the bidder. If the bidder can be sold more allowances, the settlement price algorithm will do so, up to the limits of the bid guarantee. However, the settlement price algorithm will not sell the bidder more allowances than they bid for; in the example above, Entity D will not win any more than 1,680,000 allowances.

For a Current Auction allowance supply of 4,405,000 allowances, the allowances won by each bidder and their respective total bid cost are shown below.

Table 7: Winning Bids Example

Entity Name	Allowances Won	Total Cost
Entity A	580,000	\$6,739,600
Entity B	130,000	\$1,510,600
Entity C	1,410,000	\$16,384,200
Entity D	1,648,000	\$19,149,760
Entity E	637,000	\$7,401,940
Total	4,405,000	\$51,186,100

Example 10: Tiebreaker Example

Table 8 illustrates the bids from a single round, sealed bid auction format, but is designed to highlight the tiebreaking process as well as what happens when the number of GHG allowances offered for sale is not easily divisible by 1,000. Example 10 includes the same bid submissions as used in Example 8 and 9.

Section 95911(e)(5) of the Regulation specifies the tiebreaker procedure that is used when the sum of bid quantities exceeds the remaining allowances available for sale. For example, bid quantities are equal to 5,000 allowances, but at the prior price, only 2,000 allowances remained to be sold. Each entity's share of the allowances bid for is calculated. Each entity is awarded allowances based on its share times the number of allowances remaining to be sold, rounded down to the nearest whole allowance. If there are allowances remaining as a result of rounding down, those allowances are awarded to entities by assigning a random number to each entity. The remaining allowances are awarded to entities starting with the lowest assigned random number and proceeding to the next higher random number until all remaining allowances are awarded. It should be clear that, when the tiebreaker process is complete, allowances sold will not be in lots of 1,000.

Available allowances for sale: 4,100,000

The purchase limits for this auction are:

Electrical Distribution Utility = 1,640,000 allowances.

Covered Entity or Opt-In = 615,000 allowances.

Voluntarily Associated Entity = 164,000 allowances.

Entity A: Entity A's bids are still within the purchase limit.

Entity B: Entity B's 2nd bid is still not within the purchase limit. Entity B's 2nd bid is reduced to 34,000 (or 34 bid lots) to comply with the purchase limit.

Entity C: Entity C's bids are still within the purchase limit.

Entity D: Entity D's 2nd bid is still not within the purchase limit but is not reduced as much as in Example 8, the first settlement price example, since allowance supply is larger. In this Example, Entity D's 2nd bid is reduced to 740,000 allowances (or 740 bid lots). Entity D's purchase limit is still more limiting than the submitted bid guarantee of \$28,427,200.

Entity E: Entity E's bids are still within the purchase limit.

Table 8 shows the determination of the settlement price for the larger allowance supply of 4,100,000 allowances. Again, bids from all bidders are ranked from highest bid price to lowest bid price. At the settlement price in Example 8 of \$16.44, there are 48,000 allowances remaining to be sold, but at the next bid price of \$14.46, Entities A and E want to purchase 220,000 allowances (as indicated in Table 8 by the negative number of allowances remaining for sale at a price of \$14.46). For this Current Auction, the settlement price is \$14.46 and all 4,100,000 allowances are sold for a total bid cost of \$59,286,000. The Auction Administrator must implement the tiebreaker procedure to determine allowances won by Entities A and E.

Table 8: Settlement Price Determination with a Tiebreaker

Bidder Name	Bid Price	Accepted Bid Lots	Accepted Bid Allowances	Cumulative Allowances	Allowance Supply Remaining
C	\$40.35	240	240,000	240,000	3,860,000
C	\$36.50	420	420,000	660,000	3,440,000
C	\$34.59	750	750,000	1,410,000	2,690,000
A	\$21.26	130	130,000	1,540,000	2,560,000
D	\$20.19	900	900,000	2,440,000	1,660,000
E	\$18.48	300	300,000	2,740,000	1,360,000
A	\$17.29	190	190,000	2,930,000	1,170,000
D	\$17.24	740	740,000	3,670,000	430,000
B	\$16.67	130	130,000	3,800,000	300,000
E	\$16.44	252	252,000	4,052,000	48,000
A	\$14.46	135	135,000	4,187,000	-87,000
E	\$14.46	85	85,000	4,272,000	-172,000
A	\$11.62	125	125,000	4,397,000	0
B	\$11.34	34	34,000	4,431,000	0
E	\$11.34	35	35,000	4,466,000	0

Entities A and E bid for a total of 220,000 allowances at the bid price of \$14.46.

Entity A's share is 61.3636 percent ($135,000/220,000 = 0.613636$).

Entity E's share is 38.6363 percent ($85,000/220,000 = 0.386363$).

Entity A would be awarded 29,454 allowances ($0.613636 * 48,000$, rounded down to the nearest whole allowance).

Entity E would be awarded 18,545 allowances ($0.386363 * 48,000$, rounded down to the nearest whole allowance).

The total number of allowances awarded through this process is 47,999; one allowance remains to be awarded to the lowest random number. If Entity A is

assigned a random number of 5 and Entity E is assigned 77, the last allowance is awarded to Entity A.

Allowances won in the tiebreaker are added to allowances won at higher bid prices. For example, Entity A's total allowances are 349,455 (130,000 + 190,000 + 29,454 + 1).

Allowances won by each bidder and their respective total bid cost are shown in Table 9.

Table 9: Winning Bids Example

Entity Name	Allowances Won	Total Cost
Entity A	349,455	\$5,053,119
Entity B	130,000	\$1,879,800
Entity C	1,410,000	\$20,388,600
Entity D	1,640,000	\$23,714,400
Entity E	570,545	\$8,250,081
Total	4,100,000	\$59,286,000

VI. Bid Evaluation in Advance Auction

In the examples provided in this attachment, the assumption is that bids were submitted for a Current Auction. The bid evaluation process for an Advance Auction is the same, although the bid guarantee available, purchase limits, and holding limits would be different.

Bidders submit a single bid guarantee instead of two separate bid guarantees (i.e., one for the Current Auction and one for the Advance Auction). Because the bidder submits a single bid guarantee, the dollar amount of the bid guarantee is applied first to Current Auction bids and the remainder to Advance Auction bids. When the settlement price is determined for the Current Auction, the Auction Administrator determines the remaining amount of the bid guarantee, and applies the remaining amount to the Advance Auction.